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=> d his

     (FILE 'HOME' ENTERED AT 08:50:13 ON 07 DEC 2005)
     FILE 'CA' ENTERED AT 08:50:21 ON 07 DEC 2005
L1  33753 S (MULTICHANNEL OR MULTITUBE OR(MULTI OR MULTIPLE OR PLURAL? OR
          PARALLEL)(2A)(TUBE OR CHANNEL OR TUBULAR)OR 2 OR 3 OR 4 OR 5 OR 6
          OR 7 OR 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR
          18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25)(3A)(REACTOR OR
          MICROREACTOR OR MINIREACTOR)
L2   8011 S (TWO OR THREE OR FOUR OR FIVE OR SIX OR SEVEN OR EIGHT OR NINE OR
          TEN OR ELEVEN OR TWELVE OR THIRTEEN OR FOURTEEN OR FIFTEEN OR
          SIXTEEN OR SEVENTEEN OR EIGHTEEN OR NINTEEN OR TWENTY)(3A)(REACTOR
          OR MICROREACTOR OR MINIREACTOR)
L3    214 S ARRAY(3A)(REACTOR OR MICROREACTOR OR MINIREACTOR)
L4   9796 S L1-3 AND CATALY?
L5   5076 S L1/TI,IT,ST
L6   3705 S L2/TI,IT,ST
L7    112 S L3/TI,IT,ST
L8   1008 S L4 AND L5-7
L9    137 S L8 AND(SCREEN? OR DISCOVER? OR EVALUAT? OR IDENTIF? OR ANALY? OR
          STUDY? OR STUDIE# OR CHARACTERI? OR TEST? OR ASSESS? OR EXAMIN? OR
          DIFFERENTIA? OR COMPAR? OR OPTIM?)(3A)CATALY?
L10    10 S L8 AND(SCREEN? OR DISCOVER? OR EVALUAT? OR IDENTIF? OR ANALY? OR
          STUDY? OR STUDIE# OR CHARACTERI? OR TEST? OR ASSESS? OR EXAMIN? OR
          DIFFERENTIA? OR COMPAR? OR OPTIM?)(3A)(METHOD OR PROCESS)(4A)
          (DESIGN? OR CONTROL? OR CONDITION? OR PARAMETER? OR VARIABLE)
L11     0 S L8 AND(CAPILLARY OR PASSIVE OR ORIFICE)(3A)(FLOW?(2A)(CONTROL? OR
          RESTRICT?))
L12     1 S L4 AND(CAPILLARY OR PASSIVE OR ORIFICE)(3A)(FLOW?(2A)(CONTROL? OR
          RESTRICT?))
L13  8788 S L4 NOT L8
L14   760 S L13 AND(SCREEN? OR DISCOVER? OR EVALUAT? OR IDENTIF? OR ANALY? OR
          STUDY? OR STUDIE# OR CHARACTERI? OR TEST? OR ASSESS? OR EXAMIN? OR
          DIFFERENTIA? OR COMPAR? OR OPTIM?)(3A)CATALY?
L15    51 S L13 AND(SCREEN? OR DISCOVER? OR EVALUAT? OR IDENTIF? OR ANALY? OR
          STUDY? OR STUDIE# OR CHARACTERI? OR TEST? OR ASSESS? OR EXAMIN? OR
          DIFFERENTIA? OR COMPAR? OR OPTIM?)(3A)(METHOD OR PROCESS)(4A)
          (DESIGN? OR CONTROL? OR CONDITION? OR PARAMETER? OR VARIABLE)
L16   214 S L14 AND FLOW?
          E KAPTEIJN F/AU
L17    14 S E3-4 AND 1993/PY
L18     1 S L17 AND IND/SO
L19   417 S L9-12,L15-17
L20   264 S L19 NOT PY>2000
L21    39 S L19 AND PATENT/DT AND PY<2004
L22   281 S L20-21

=> d bib,ab l22 1-281

L22  ANSWER 175 OF 281  CA  COPYRIGHT 2005 ACS on STN
AN   104:188816  CA
TI   The design and construction of a multichannel microreactor for catalyst
     evaluation
AU   Creer, J. Graham; Jackson, Peter; Pandy, Gordon; Percival, Gordon G.;
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Seddon, Duncan
CS Melbourne Res. Lab., BHP Co. Ltd., Mulgrave, 3170, Australia
SO Applied Catalysis (1986), 22(1), 85-95
AB The design and construction of a **multichannel microreactor** (**3** stainless-steel tubes 200-mm long and 6-mm in diam. in a block) for **catalyst evaluation** is described. Problems assocd. with reproducibility of such systems are discussed and methods of overcoming them proposed. Microreactors offer sufficient mass and heat transfer so that the choice of **catalyst** form, whether tablet, extrusion or crushed chip, is of secondary importance to the chem. being obsd.

L22 ANSWER 176 OF 281 CA COPYRIGHT 2005 ACS on STN
AN 104:156633 CA
TI Experimental system for heterogeneous **catalysis** research
AU Korf, C. J.; Espinoza, R. L.
CS S. Afr.
SO CSIR Report CENG (1986), 584, 31 pp.
AB The exptl. system for heterogeneous **catalysis** has the following features: (1) modular design of the feed prepn., feed control, reactors, and data anal. stations, thus allowing great flexibility in the expts.; (2) the capability of prepg. gas mixts. to be used as feeds, thus requiring fewer **flow** meters; (3) the capability of using gas and/or liq. feeds; (**4**) **3 microreactors** with sampling points at each outlet, allowing the compn. of intermediate products to be detd. when the reactors are used in series; (5) the capability of measuring temp. gradients in the **microreactors**; and (**6**) precautions against temp. overshoot and temp. runaway.

L22 ANSWER 203 OF 281 CA COPYRIGHT 2005 ACS on STN
AN 97:61592 CA
TI **Four-reactor** apparatus for chromatographic **studies** of **catalysts** and sorbents
AU Steininger, Mieczyslaw; Liszka, Marian; Rutkowski, Marian; Slomka, Bogdan
CS Inst. Chem. Technol. Pet. Coal, Tech. Univ. Wroclaw, Wroclaw, 50-344, Pol.
SO Journal of Chromatography (1982), 243(2), 279-84
AB A general purpose, **4-microreactor** app. was constructed, which includes 3 sections (A, B, and C) of 6-way valves, 4 in each section. Each section of valves plays a sep. role: the valves in section A serve to introduce reactants into an individual reactor or a gas chromatograph by the pulse technique; those in section B link the **4 microreactors** to the app.; those in section C make possible the introduction of reaction mixts. into the chromatograph when the reactor is in operation being fed continuously with substrates.

L22 ANSWER 209 OF 281 CA COPYRIGHT 2005 ACS on STN
AN 96:9039 CA
TI Evaluation of the stability of **catalysts** for the hydrocracking of vacuum distillates
AU Kurganov, V. M.; Shtein, V. I.; Alikperova, M. S.; Akimov, Sh. K.
CS USSR
SO Sbornik Nauchnykh Trudov - Vsesoyuznyi Nauchno-Issledovatel'skii

Institut po Pererabotke Nefti (1980), 38, 53-6
LA Russian
AB The following conditions were found suitable for the rapid **evaluation** of hydrocracking **catalysts** in lab. **flow reactors**: 440°, **2** h-1 oil feed space velocity, and 1500 H-feed vol. ratio. **Two** lab. **reactors** of 200 mL capacity, 1 filled with a ground (particle size 0.6-1 mm) **catalyst** under **test** and the other with a std. com. **catalyst**, are **tested** for 200-300 h under the above conditions using a vacuum gas oil as the feed. The yields and the compns. of **catalyzates** are then **compared**.

L22 ANSWER 210 OF 281 CA COPYRIGHT 2005 ACS on STN
AN 95:102275 CA
TI Model apparatus for **testing catalysts** for reducing nitrous gases
AU Mirzarakhimov, M. S.; Arifov, Zh. A.; Musaev, M. N.; Alidzhanov, T. A.
CS USSR
SO Deposited Doc. (1980), VINITI 1064-80, 10 pp. Avail.: VINITI
LA Russian
AB Waste gases from the manuf. of dil. HNO3 were rendered harmless by the **catalytic** redn. of NOx to N with NH3, and an app. was developed to det. the activity of various **catalysts**. The optimum redn. temp. was 260°; the optimum NH3 **flow** rate was 0.04 m3/h. The app. makes it possible to compare the activity of an exptl. **catalyst** with that of an industrial std. **catalyst** in **2 reactors** simultaneously operating under identical conditions.

L22 ANSWER 244 OF 281 CA COPYRIGHT 2005 ACS on STN
AN 77:144315 CA
TI Automated reactor system for **catalyst** research
AU Hogan, R. J.; Doane, E. P.
CS Res. Dev. Dep., Phillips Pet. Co., Bartlesville, OK, USA
SO Preprints - American Chemical Society, Division of Petroleum Chemistry (1971), 16(2), D35-D42
AB A fully automatic microreactor unit for **catalytic** studies is described. The system provides the means for obtaining data on **catalytic** reactions quickly, accurately, and with a min. amt. of attention. It can be adapted easily to a variety of expts., including reaction kinetics, **catalyst screening**, and **process variable studies**. The unit employs a central master programmer to conduct unattended expts. with **6 reactors**, and a high speed analyzer-integrator system to collect and analyze samples on command, and record the results on paper tape.

L22 ANSWER 281 OF 281 CA COPYRIGHT 2005 ACS on STN
AN 54:58703 CA
OREF 54:11399e-i,11400a
TI Macrokinetics of **catalytic** synthesis of ammonia at high pressures in continuous **flow** systems
AU Rusov, M. T.; Samarin, B. P.; Sidorov, I. P.; Strel'tsov, O. A.; Kurkchi, G. A.; Tretyak, V. G.; Koryakina, E. V.
SO Trudy Gosudarst. Nauch.-Issledovatel. i Proekt. Inst. Azot. Prom. (1957), (No. 7), 101-20
LA Unavailable
AB In synthesis of NH3 the accumulation of reaction products lowers the rate of the **catalytic** reaction, i.e. the diffusion processes interfere

with the kinetic processes. Since both are interrelated the theoretical calcns. become very involved and practically useless. The study was undertaken to investigate the effect of the diffusion processes on the process of NH3 synthesis with the change in concn. of the reaction components and to det. the optimal conditions for reactor design. A N-H mixt. in stoichiometric proportions was purified, dried, and fed under pressure into a specially designed reactor. The **reactor** consisted of 7 columns joined in series by cross-channels located alternately at the top or the bottom of the column. The central column was used for the entry and preheat of the gas; the 6 peripheral columns were filled with the **catalyst**. In 2 series of expts. a tech. Fe **catalyst** of 2 ranges of particle size was used: 3.0-3.4 and 0.5-1.0 mm. The temp. interval 325-500°; vol. velocity at the exit 9000, 15,000, 24,000 l./hr./l. of the **catalyst**; pressures: 100, 200, and 300 kg./sq. cm. Above 400° the conversion rate depends largely on the particle size of the **catalyst**. The efficiency of **catalysts** of smaller particle size is higher at all concns. of NH3 in the gas along the whole length of the **catalyst**. The difference in efficiency increased with increase in vol. velocity of the gas. In the first 2 layers of the **catalyst** the efficiency of the smaller particle size was twice as high. With increase in NH3 concn. along the **catalyst** layer the **comparative** effectiveness at a given temp. dropped to 5-10%. Calcn. of the reaction rates vs. NH3 concn. as percentage of equil. showed that at low temps. the difference is small for the **catalysts** of different particle size. At higher temps. the difference is considerable, and it is very pronounced at temps. higher than 400°. The retarding action of diffusional processes is greatest at the lower layers of the **catalyst** when the NH3 concn. is small; their neg. effect diminishes when the concn. of NH3 approximates equil. conditions. The macrokinetic relations along the length of the **catalyst** column point to the fact that it is possible to increase its efficiency by using a **catalyst** of different particle sizes, from 2 mm. at the entry to 6 mm. at the exit.

=> log y
STN INTERNATIONAL LOGOFF AT 09:53:37 ON 07 DEC 2005

=> **d his**

(FILE 'HOME' ENTERED AT 14:04:23 ON 07 DEC 2005)
FILE 'CA' ENTERED AT 14:04:29 ON 07 DEC 2005
E HOGAN R/AU
L1 55 S E3,E9-10,E35-36
L2 4 S L1 AND (REACTOR OR MICROREACTOR)
E DOANE E/AU
L3 24 S E4,E7
L4 5 S L3 AND (REACTOR OR MICROREACTOR)
L5 8 S L2,L4

=> **d bib,ab l5 1-8**

L5 ANSWER 4 OF 8 CA COPYRIGHT 2005 ACS on STN
AN 100:123636 CA
TI An integrated testing facility for bench scale catalyst research
AU Johnston, H. D.; **Hogan, R. J.**; McMurtrie, D. E.
CS Res. Dev. Dep., Phillips Pet. Co., Bartlesville, OK, 74004, USA
SO Preprints - American Chemical Society, Division of Petroleum Chemistry (1983), 28(4), 960-72
AB This paper describes an automated system that allows for £21 **reactors** to be in operation concurrently with a staff of 5 people. All units are independently run without normal operator intervention and the system is designed fail safe for unattended operation. It has been used extensively for screening exploratory catalysts, catalytic process optimization, kinetics modeling and, increasingly, in refinery process optimization.

=> **log y**
STN INTERNATIONAL LOGOFF AT 14:07:59 ON 07 DEC 2005